XXVI *Two Letters of Mr.* John Harriſon *of* Cambridge *in* New England, *to Mr.* Peter Collinſon, *F. R. S. concerning a ſmall Species of* Waſps.

SIR, Cambridge, 29 July, 1748.

Read May 9. 1751. ABOUT the 28 of May laſt, I diſcover'd hanging to the roof on the inſide of my green-houſe (which is of wood) ſomething about the ſize of a child's farthing ball, in ſhape like a Provence roſe full-grown, before it opens, that is, a round bottom, ending in a blunt point; at which point is a round hole, large enough for inſects (ſomething leſs than a waſp) to go in and out at. I ſoon perceiv'd, that it was the work of inſects, a ſmall ſpecies of waſps. They have ſix legs, black next to their body, then yellow, ending in cinnamon-colour. Some have 6 and 7 rings, of a bright yellow colour, round the tail part of their body, with ſmall hollows or indents on the upper parts. The diviſions between the rings are of a bright jet-colour; the face is yellow; on the head are two horns.

Theſe little inſects are very induſtrious in making their neſt. The top of it is faſtened or glewed to the cieling, and is formed of many round coverings, one within another, yet not touching each other, by the 8 part of an inch. Probably this ſpace is left to make their cells, in which they lay their eggs. Theſe coverings have been repeated until there are now thirteen finiſhed, ranging equally one over another.

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It is moſt curious to ſee their manner of working. As this performance is moſt externally, I have an opportunity of ſeeing every minute circumſtance of this operation, which is carried on with as much pains and application, as (but I think I may ſay with more ſkill and contrivance than) the honey-bees, who are beholden to a hive or hollow tree, *&c.* to fabricate their combs in; whereas theſe little animals are the ſole builders of the outward walls, as well as the interior parts of their dwellings. They range about for the materials, but with all my endeavours I could never obſerve, from whence they were collected; only this I know, that they bring a little lump of dark-colour'd paſte between their fore-legs, about the ſize of a radiſh-ſeed. This they carry firſt to the inſide of the covering, which they are about to finiſh, and ſtay near half a minute, I ſuppoſe to work ſome of it on that ſide: then they return with the greateſt part, to enlarge it on the outſide, which they execute in a moſt dextrous manner (as I have many times ſeen) by taking the paſte from between their legs with their mouths (which open croſs ways to their body) and fixing it on the edge of the covering, working backwards, for about an inch at a time in length, and then ſpread and ſmooth it with their horns. This is all performed in about two minutes, and they are ſeldom more than five days in finiſhing a whole cover. By the niceſt obſervation I could make, their number is between 20 and 30. They ſeem no-ways hurtful; and are ſo intent on their buſineſs, that if 3 or 4 people at a time are looking within ſo many inches of their neſt, they neither attack them, nor forbear to carry on the

public work, which is now 5 inches diameter, and about 4 deep. In my next you ſhall hear further how this little colony goes on. I am, Sir,

Your moſt humble ſervant,

John Harriſon.

SIR, Cambridge, Dec. 22 1748.

WHAT I have further to add to my former obſervations on the pretty inſects, that were building their neſt in my green-houſe, is, that they continued their work, in the ſame manner as before-mention'd, untill they had finiſhed 15 coverings one over another, and began three more, which they never completed, but one is more finiſhed than the others.

About the 16 of Auguſt there was a ceſſation of their uſual induſtry. I could only obſerve one or two in a day at work, which continued to the 26, when they quite gave over adding any more to their neſt. Since that, I could only ſee one or two going in and out once or twice a day, for about a fortnight after. In that time I obſerved two of theſe inſects come out of their neſt, of an extraordinary ſize, at leaſt one third larger than thoſe, that built the neſt. Theſe ſeem to me, and undoubtedly are, the parents or queens appointed by the all-wiſe Creator for continuing their ſpecies, as their ſluggiſhneſs has a near analogy to the queen-bees, that are ſometimes ſeen to come to the mouth of the hive, without any other ſeeming buſineſs than to take the air, and ſhew

themſelves, and then return into the hive again. About the 6 or 7 of September, I ſaw the laſt; none have ſince been ſeen.

As theſe inſects are new to me, and to all who have ſeen them, I cannot ſay any thing certain of their future progreſs; but, if I may compare them to, as they moſt reſemble the hornets, in their making and hanging up of their neſt, the queens will only ſurvive, and each in the next ſpring be the founder of a new colony. The common waſps are under the ſame regulation. The males all die at the approach of winter, and leave but very few females to ſurvive them. This is wonderfully contrived to prevent the increaſe of ſuch noxious animals; whereas the bees, ſo beneficial to mankind, ſurvive the winter, unleſs robbed of their honey, which is their ſupport during that ſeaſon.

I have had at leaſt 500 learned gentlemen of this univerſity to ſee theſe inſects, and their operations, Is it not very remarkable? Not any one of them had ever ſeen the like, or could give any ſimilar account of any thing of this nature.

I have waited with impatience the coming of the ſpring; but, to my great diſappointment, none of my pretty little inmates returned to their neſt; which makes me conclude, that it is their annual work. This determined me to take it down carefully; and as I promiſed to ſend it you, I deſire your acceptance of it, and of one of the inſects. I hope it will prove an agreeable entertainment to you and your curious friends. I am, Sir,

Your moſt obliged humble ſervant,

John Harriſon.